

Abstract of the Disclosure

Matched Reactance Machine Power-Generation System

[0059] A system and method is described for using a matched reactance machine power generation system (MRMPGS) to provide a constant-voltage power for an electric distribution system. The system and method include a permanent magnet rotor type machine without a field winding for excitation. This type of machine presents much better reliability, as the excitation of the machine is fixed and achieved by a permanent magnet embedded in the rotor assembly. The voltage regulation is achieved through speed and load coordination that is based on a machine reactance specially selected and calculated to achieve compensation between the external voltage variation and the internal machine voltage drop, resulting in substantial savings in electronics hardware.